



FAA-E-2075a

June 15, 1967
SUPERSEDING
FAA-E-2075, 2/17/64

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION SPECIFICATION

RADIO HEADSET PANEL

1. SCOPE

1.1 Scope.- The equipment specified herein is a Radio Headset Panel that is designed to couple one or two headsets and other leased communication facilities into FAA-owned equipment.

2. APPLICABLE DOCUMENTS

2.1 FAA specifications and standards.- The following FAA specifications and standards of the issues specified in the invitation for bid or request for proposals form a part of this specification:

- | | |
|--------------|---|
| FAA-D-1272 | Instruction Booklets, Electronic Equipment |
| FAA-G-2100/1 | Electronic Equipment, General Requirements, Part I, General Requirements for all Equipment |
| FAA-R-1030 | Packing of Electronic Equipment |

(Copies of these specifications, and of the applicable FAA specifications and drawings, may be obtained from Federal Aviation Administration, Washington, D. C. 20590, ATTN: Contracting Officer. Requests should fully identify material desired, i.e., specification numbers, dates, amendment numbers, complete drawing numbers; also requests should state the contract involved or other use to be made of the requested material.)

3. REQUIREMENTS

3.1 Equipment to be furnished by the contractor.- Each equipment furnished by the contractor shall be complete in accordance with all specification requirements. Instruction booklets shall be furnished in accordance with Specification FAA-D-1272. Information about integration into the system and theory of operation will be supplied by the FAA at the request of the Contractor.

3.2 Test conditions and power source

3.2.1 Service conditions.- The ambient conditions shall be those of Environment I (I-3.2.23, FAA-G-2100/1).

3.2.2 Power source.- The equipment shall operate from a two wire DC power source. The design-center voltage (I-3.2.21, FAA-G-2100/1) shall be 48 v.

3.3 Construction.- Each equipment shall be of rack-panel-and-chassis construction, size "B" one piece without door. The chassis shall be at least 5" deep and shall have a full size removable cover plate on top to allow access to components and wiring. In other respects, the chassis shall be in accordance with the following portions of Dr-D-21342F: rear view, end view, general details, notes 2, 3, 4 (change .064 to .063), 5, 8, 10, and 11. The transformer T-1 and relays, shall be mounted outside on the rear chassis wall; all other components shall be mounted inside and appropriately spaced for accessibility. The connectors and R-1 shall be accessible for tests and adjustments from the rear without removing the panel from the rack. See D-40091-3A.

3.4 Wiring.- Wiring shall be in accordance with FAA-G-2100/1 and drawing DR-C-40091-1-C.

3.5 Components.- Where brand names, or equal, are specified, also see paragraph I-3.14.1.2 of FAA-G-2100/1.

3.5.1 Relays.- Relays K1 and K2 shall be C. P. Clare Type J with code 24 bifurcated contacts, or equal, with individual covers, 200-ohm $\pm 5\%$ coils properly phased as reactors, to operate on 48 v dc. Relays K3 To K6 shall be C. P. Clare Type J with code 24 bifurcated contacts, or equal, with individual covers, 1600-ohm $\pm 5\%$ coils for 48 v dc operation.

3.5.2 Induction coil.- The induction coil shall be Western Electric Type WE-181B, or equal.

3.5.3 Varistor unit.- The varistor shall be Western Electric Type VR-33L, or equal.

3.5.4 Resistors.- Resistor R1 shall be a wire-wound potentiometer, +10% tolerance, with split shank locking feature. R2 through R14 shall be 5% tolerance. R2 through R6, R8 through R10, and R12 through R14 shall be 1/2 watt; R7 and R11, 1 watt. Resistance values shall be as indicated on DR-C-40091-1-C.

3.5.5 Capacitors.- Capacitors C1 and C2 shall be 6 MFD Aerovox Type P30ZN, or equal. C3 shall be 3 MFD Aerovox Type P30ZN, or equal (modifies FAA-G-2100/1).

3.5.6 Transformer.- Transformer T1 shall meet the following requirements:

| | |
|----------------------|--|
| Primary impedance: | 600 ohms +10% at 1000 Hz |
| Secondary impedance: | 5000 ohms +10% at 1000 Hz |
| Frequency range: | 300 to 3000 Hz +2 db referred to 1000 Hz |
| Transformer loss: | Less than 1 db |
| Operating level: | For 1mw, or less |

3.5.7 Connectors.- The connectors shall be Amphenol Blue Ribbon, or equal, catalog numbers as follows: J1 shall be No. 26-4401-16P; J2, 26-4401-24P. Mating connectors Nos. 26-4301-16S and 26-4301-26S shall be supplied with J1 and J2. The connectors shall mate with existing Blue Ribbon connectors of these types on FAA-connected equipment.

3.5.8 Hum and cross talk level.- Hum and cross talk level developed in the unit shall not exceed -50 dbm at output terminals of transmitting circuit and -70 dbm at output of receiving circuits under the test conditions of 4.3.

3.6 Nameplate.- The nameplate shall be centrally mounted on the front panel. The name shall be: RADIO HEADSET PANEL.

4. QUALITY ASSURANCE PROVISIONS

4.1 Design qualification test.- The following design qualification test shall be made under normal test conditions:

| <u>Test</u> | <u>Paragraph</u> |
|-----------------------------|------------------|
| Transformer Characteristics | 3.5.6 |

4.2 Type tests.- None required.

4.3 Production tests.- The following production tests shall be made:

| <u>Test</u> | <u>Paragraph</u> |
|--------------------------------------|------------------|
| Circuit ring out and relay operation | 3.4, 3.5.1 |
| Hum and cross talk level | 3.5.8 |

TEST A

- (1) Connect 91-ohm, 1.0 watt resistors across terminals 7 and 8, and 9 and 10, of J1.
- (2) Strap terminals 1 to 2, 3 to 4, and 5 to 6, of J1, to operate all relays except K5.
- (3) Connect a 48 v dc power supply with not more than 1% rms ripple voltage, to terminals 1 and 2 of J2.
- (4) Apply a 1000 Hz 2.7 volt rms signal to terminals 15 and 16 of J2.

The hum and cross talk level measured across terminals 11 and 12, and 13 and 14, of J2 shall not exceed -50 dbm.

TEST B

Connect the same as in TEST A, except:

- (1) Remove the 1000 Hz signal from terminals 15 and 16 of J2 and connect across resistor on terminals 7 and 8, or 9 and 10, of J1.
- (2) Connect 600-ohm resistors between terminals 11 and 12, 17 and 18, 19 and 20, of J2, and between terminals 11 and 12 of J1.
- (3) Adjust 1000 Hz signal to produce -10 dbm across resistor connected to terminals 11 and 12 of J2.

The hum and cross talk level measured across resistors connected to terminals 11 and 12 of J1, and terminals 17 and 18, 19 and 20, of J2 shall not exceed -70 dbm.

5. PREPARATION FOR DELIVERY

5.1 General.- See FAA-R-1030.

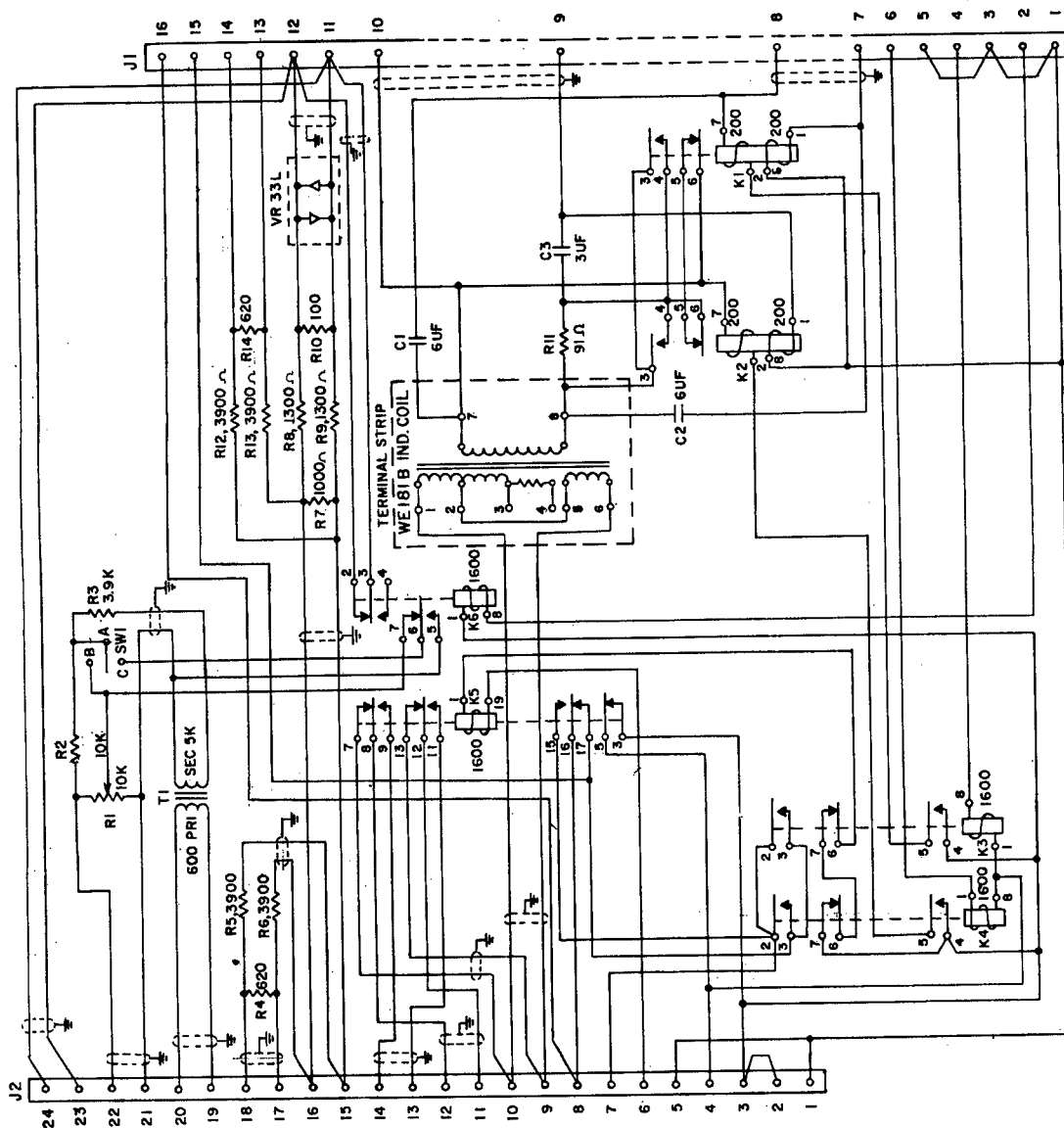
6. NOTES

6.1 Notes.- None.

* * * * *

ATTCH: DR-C-40091-1-C
DR-D-40091-3A
DR-D-21342F

- NOTES:
1. AMPHENOL BLUE RIBBON CONNECTORS SER. 26.
J1 AND J2 MOUNTED ON CHASSIS.
 2. R2 THRU R6, R8 THRU R10. 1/2 WATT.
R1 WIRE WOUND POTENTIOMETER.
R7 & R11, 1 WATT - R2 THRU R14, 5%.



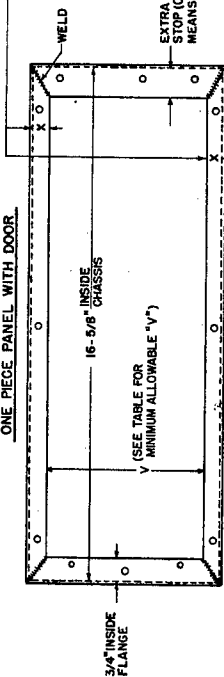
FEDERAL AVIATION AGENCY
AVIATION FACILITIES DIVISION
COMMUNICATIONS ENGINEERING BRANCH

RADIO HEADSET PANEL
WIRING DIAGRAM

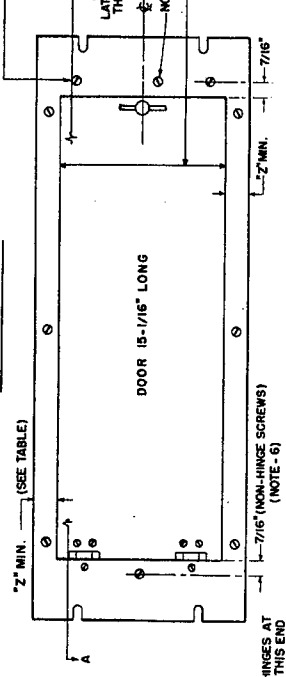
APPROVED: *[Signature]*
DATE: 10-3-61
DR-C-40091-1-C

| DELETED NOTE 3. CORRECT RESISTOR VALUES | 2-14-61 | 3-7-63 | 7-5-63 |
|---|---------|--------|--------|
| C AND TERM. 15 OF J1 | 2-14-61 | 3-7-63 | 7-5-63 |
| B ADDED R12, R13, R14. TRANS PRI 100 TO 600 | 2-14-61 | 3-7-63 | 7-5-63 |
| A CHG R4, R5 & R6 PER EEM AF P 6530.1 CH1 | 2-14-61 | 3-7-63 | 7-5-63 |

OPTIONAL METHOD - 1 ONE PIECE PANEL WITH DOOR



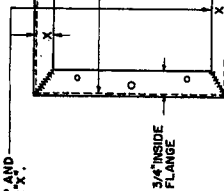
VIEW LOOKING INTO CHASSIS
WITH PANEL REMOVED



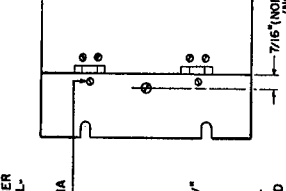
HINGES AT
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METHODS 1 & 2

"X" MINIMUM INSIDE DIMENSION OF TOP AND
BOTTOM FLANGE. SEE TABLE FOR "X".



VIEW LOOKING INTO CHASSIS
WITH PANEL REMOVED

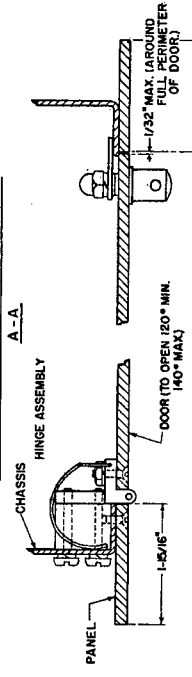


HINGES AT
THIS END

NOTES:

- OPTIONAL METHODS: EITHER OF THE TWO OPTIONAL METHODS OF CONSTRUCTION MAY BE USED, PROVIDED ALL REQUIREMENTS ARE MET.
- CHASSIS SHALL BE FORMED AND SEAM WELDED. CHASSIS FABRICATION BY RIVETING, SCREW FASTENERS OR SPOT WELDING NOT PERMITTED.
- PANEL SIZE AND SLOTTING TO BE IN ACCORDANCE WITH DR. D-211408 (OR LATER ISSUE).
- CHASSIS MATERIAL: ALUMINUM ALLOY. MINIMUM GAUGE .064". THICKNESS OF MATERIAL AND METHOD OF FORMING AND REINFORCING SHALL BE SUCH AS TO RESULT IN A RIGID CHASSIS ASSEMBLY, CAPABLE OF SUPPORTING THE EQUIPMENT WITHOUT TWIST OR SAG.
- ALL ITEMS SHALL BE NON-FERROUS.
- HINGES SHALL BE IN ACCORDANCE WITH DWG. C-212780 (OR LATER ISSUE), WHICH SEE FOR LAYOUT OF HINGE SCREWS.
- LATCHES SHALL BE IN ACCORDANCE WITH DWG. C-212850 (OR LATER ISSUE), WHICH SEE FOR LAYOUT OF LATCH.
- WHERE NO TOLERANCES ARE GIVEN ON DIMENSIONS, $\pm 1/32"$ OR LESS SHALL APPLY. SEE FOR LAYOUT OF LATCH.
- AVOID INTERFERENCE WITH LATCH BY DROPPING SCREWS BELOW LATCH & IF NECESSARY.
- VENTILATION HOLES MAY BE CUT IN TOP, BOTTOM, AND SIDES OF CHASSIS IF NECESSARY.
- AFTER ASSEMBLY, NO PORTION OF ANY COMPONENT SHALL PROJECT BEYOND SIDES OR TOP AND BOTTOM OF CHASSIS. NOR SHALL ANY PORTION OF THE EQUIPMENT (INCLUDING HEADS OF SCREWS, ETC.) PROJECT BEYOND A PLANE 1/16" BELOW TOP EDGE OF PANEL, OR A PLANE 1/16" ABOVE BOTTOM EDGE OF PANEL (PLANES PERPENDICULAR TO PANEL).
- LEVEL BACK CORNER OF DOOR ABOVE TOP HINGE AND BELOW BOTTOM HINGE TO OR WITHIN 1/16" OF CHASSIS. IF DOOR FLANGES OF CHASSIS (METHOD 2) ALSO METHOD 1 IF DOOR OVERLAPS TOP AND BOTTOM FLANGES.

DETAILED SECTION, METHODS 1 & 2



NOT OVER 14-3/4"

OUTLINE OF CHASSIS

COMPONENTS MOUNTED ON REAR SURFACE OF CHASSIS

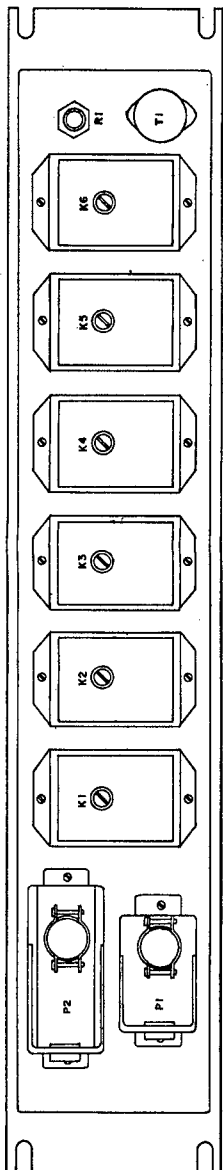
MAX. O.D. OVER CHASSIS, INCLUDING SCREW HEADS, ETC. 8-5/8" MAX.

REAR VIEW

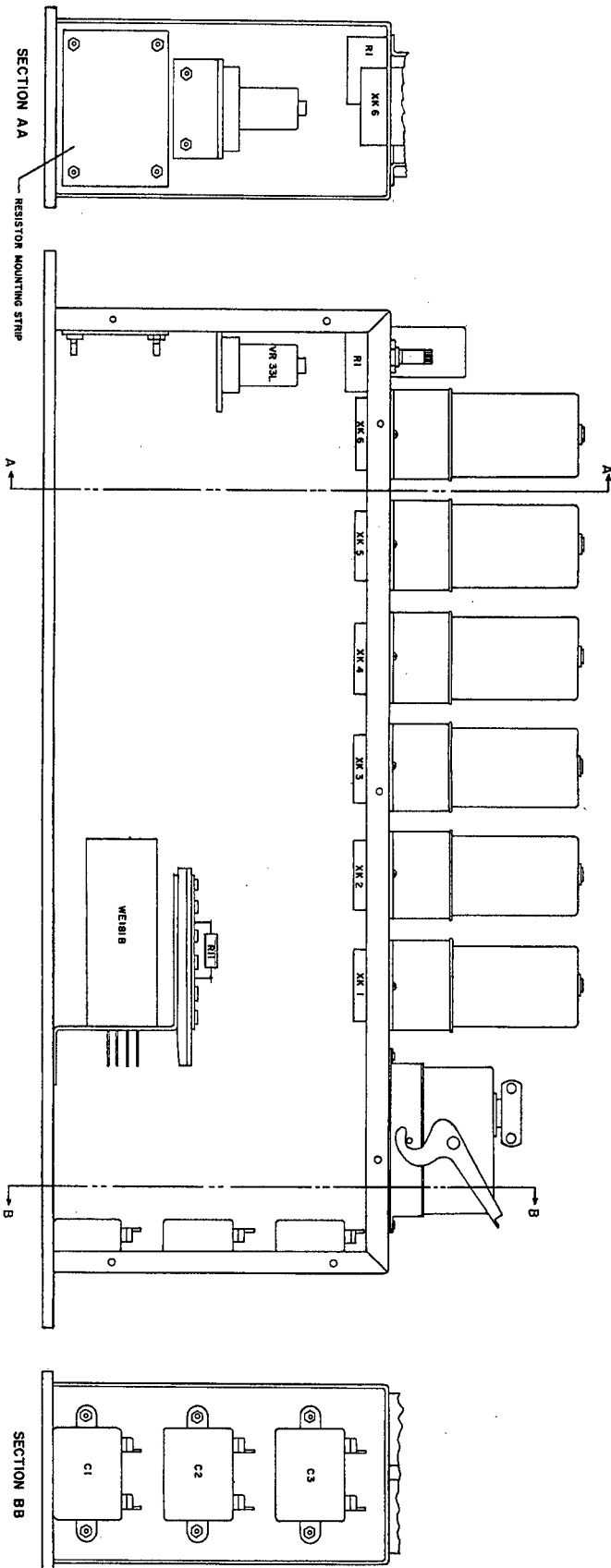
END VIEW

GENERAL DETAILS, METHODS - 1 & 2

| METHODS 1 & 2 | | | | | | | | | | 1 | |
|---------------|------------|--------------------|----------------|----------------------|--------------------|-----------------|--------------------|----------------|----------------------|--------------------|-----------------|
| MIN. V | PANEL SIZE | MIN. NO. OF HINGES | NO. OF LATCHES | MAX. DEPTH OF FLANGE | MIN. FLANGE SCREWS | MIN. PANEL SIZE | MIN. NO. OF HINGES | NO. OF LATCHES | MAX. DEPTH OF FLANGE | MIN. FLANGE SCREWS | MIN. PANEL SIZE |
| 2" | B | 3 | 3 | 2-7/8" | 7/16" | 3-1/4" | 3 | 3 | 2-7/8" | 7/16" | 3-1/4" |
| 3" | C | 3 | 3 | 3-1/4" | 7/16" | 4" | 3 | 3 | 3-1/4" | 7/16" | 4" |
| 4" | D | 3 | 3 | 4" | 7/16" | 4-1/2" | 3 | 3 | 4" | 7/16" | 4" |
| 5-1/2" | E | 3 | 3 | 5-1/2" | 7/16" | 5" | 3 | 3 | 5-1/2" | 7/16" | 5" |
| 6" | F | 3 | 3 | 6" | 7/16" | 5-1/2" | 3 | 3 | 6" | 7/16" | 5-1/2" |
| 7-1/2" | G | 3 | 3 | 7-1/2" | 7/16" | 6-1/2" | 3 | 3 | 7-1/2" | 7/16" | 6-1/2" |
| 8" | H | 3 | 3 | 8" | 7/16" | 7" | 3 | 3 | 8" | 7/16" | 7" |
| 9-1/2" | I | 3 | 3 | 9-1/2" | 7/16" | 8-1/2" | 3 | 3 | 9-1/2" | 7/16" | 8-1/2" |
| 10-1/2" | J | 3 | 3 | 10-1/2" | 7/16" | 9-1/2" | 3 | 3 | 10-1/2" | 7/16" | 9-1/2" |
| 12" | K | 3 | 3 | 12" | 7/16" | 11" | 3 | 3 | 12" | 7/16" | 11" |
| 14-1/2" | L | 3 | 3 | 14-1/2" | 7/16" | 13-1/2" | 3 | 3 | 14-1/2" | 7/16" | 13-1/2" |
| 16" | M | 3 | 3 | 16" | 7/16" | 14-1/2" | 3 | 3 | 16" | 7/16" | 14-1/2" |
| 18" | N | 3 | 3 | 18" | 7/16" | 16" | 3 | 3 | 18" | 7/16" | 16" |
| 20" | O | 3 | 3 | 20" | 7/16" | 17-1/2" | 3 | 3 | 20" | 7/16" | 17-1/2" |
| 22" | P | 3 | 3 | 22" | 7/16" | 19" | 3 | 3 | 22" | 7/16" | 19" |
| 23" | Q | 4 | 4 | 23" | 7/16" | 20-1/2" | 4 | 4 | 23" | 7/16" | 20-1/2" |
| 24" | R | 4 | 4 | 24" | 7/16" | 21" | 4 | 4 | 24" | 7/16" | 21" |
| 26" | S | 4 | 4 | 26" | 7/16" | 22-1/2" | 4 | 4 | 26" | 7/16" | 22-1/2" |
| 28" | T | 4 | 4 | 28" | 7/16" | 24" | 4 | 4 | 28" | 7/16" | 24" |
| 30" | U | 4 | 4 | 30" | 7/16" | 25" | 4 | 4 | 30" | 7/16" | 25" |
| 32" | V | 4 | 4 | 32" | 7/16" | 26-1/2" | 4 | 4 | 32" | 7/16" | 26-1/2" |
| 34" | W | 4 | 4 | 34" | 7/16" | 28" | 4 | 4 | 34" | 7/16" | 28" |
| 36" | X | 4 | 4 | 36" | 7/16" | 29-1/2" | 4 | 4 | 36" | 7/16" | 29-1/2" |
| 38" | Y | 4 | 4 | 38" | 7/16" | 31" | 4 | 4 | 38" | 7/16" | 31" |
| 40" | Z | 4 | 4 | 40" | 7/16" | 32-1/2" | 4 | 4 | 40" | 7/16" | 32-1/2" |
| 42" | AA | 4 | 4 | 42" | 7/16" | 34" | 4 | 4 | 42" | 7/16" | 34" |
| 44" | AB | 4 | 4 | 44" | 7/16" | 35-1/2" | 4 | 4 | 44" | 7/16" | 35-1/2" |
| 46" | AC | 4 | 4 | 46" | 7/16" | 37" | 4 | 4 | 46" | 7/16" | 37" |
| 48" | AD | 4 | 4 | 48" | 7/16" | 38-1/2" | 4 | 4 | 48" | 7/16" | 38-1/2" |
| 50" | AE | 4 | 4 | 50" | 7/16" | 40" | 4 | 4 | 50" | 7/16" | 40" |
| 52" | AF | 4 | 4 | 52" | 7/16" | 41-1/2" | 4 | 4 | 52" | 7/16" | 41-1/2" |
| 54" | AG | 4 | 4 | 54" | 7/16" | 43" | 4 | 4 | 54" | 7/16" | 43" |
| 56" | AH | 4 | 4 | 56" | 7/16" | 44-1/2" | 4 | 4 | 56" | 7/16" | 44-1/2" |
| 58" | AI | 4 | 4 | 58" | 7/16" | 46" | 4 | 4 | 58" | 7/16" | 46" |
| 60" | AJ | 4 | 4 | 60" | 7/16" | 47-1/2" | 4 | 4 | 60" | 7/16" | 47-1/2" |
| 62" | AK | 4 | 4 | 62" | 7/16" | 49" | 4 | 4 | 62" | 7/16" | 49" |
| 64" | AL | 4 | 4 | 64" | 7/16" | 50-1/2" | 4 | 4 | 64" | 7/16" | 50-1/2" |
| 66" | AM | 4 | 4 | 66" | 7/16" | 52" | 4 | 4 | 66" | 7/16" | 52" |
| 68" | AN | 4 | 4 | 68" | 7/16" | 53-1/2" | 4 | 4 | 68" | 7/16" | 53-1/2" |
| 70" | AO | 4 | 4 | 70" | 7/16" | 55" | 4 | 4 | 70" | 7/16" | 55" |
| 72" | AP | 4 | 4 | 72" | 7/16" | 56-1/2" | 4 | 4 | 72" | 7/16" | 56-1/2" |
| 74" | AQ | 4 | 4 | 74" | 7/16" | 58" | 4 | 4 | 74" | 7/16" | 58" |
| 76" | AR | 4 | 4 | 76" | 7/16" | 59-1/2" | 4 | 4 | 76" | 7/16" | 59-1/2" |
| 78" | AS | 4 | 4 | 78" | 7/16" | 61" | 4 | 4 | 78" | 7/16" | 61" |
| 80" | AT | 4 | 4 | 80" | 7/16" | 62-1/2" | 4 | 4 | 80" | 7/16" | 62-1/2" |
| 82" | AU | 4 | 4 | 82" | 7/16" | 64" | 4 | 4 | 82" | 7/16" | 64" |
| 84" | AV | 4 | 4 | 84" | 7/16" | 65-1/2" | 4 | 4 | 84" | 7/16" | 65-1/2" |
| 86" | AW | 4 | 4 | 86" | 7/16" | 67" | 4 | 4 | 86" | 7/16" | 67" |
| 88" | AX | 4 | 4 | 88" | 7/16" | 68-1/2" | 4 | 4 | 88" | 7/16" | 68-1/2" |
| 90" | AY | 4 | 4 | 90" | 7/16" | 70" | 4 | 4 | 90" | 7/16" | 70" |
| 92" | AZ | 4 | 4 | 92" | 7/16" | 71-1/2" | 4 | 4 | 92" | 7/16" | 71-1/2" |
| 94" | BA | 4 | 4 | 94" | 7/16" | 73" | 4 | 4 | 94" | 7/16" | 73" |
| 96" | BB | 4 | 4 | 96" | 7/16" | 74-1/2" | 4 | 4 | 96" | 7/16" | 74-1/2" |
| 98" | BC | 4 | 4 | 98" | 7/16" | 76" | 4 | 4 | 98" | 7/16" | 76" |
| 100" | BD | 4 | 4 | 100" | 7/16" | 77-1/2" | 4 | 4 | 100" | 7/16" | 77-1/2" |
| 102" | BE | 4 | 4 | 102" | 7/16" | 79" | 4 | 4 | 102" | 7/16" | 79" |
| 104" | BF | 4 | 4 | 104" | 7/16" | 80-1/2" | 4 | 4 | 104" | 7/16" | 80-1/2" |
| 106" | BG | 4 | 4 | 106" | 7/16" | 82" | 4 | 4 | 106" | 7/16" | 82" |
| 108" | BH | 4 | 4 | 108" | 7/16" | 83-1/2" | 4 | 4 | 108" | 7/16" | 83-1/2" |
| 110" | BI | 4 | 4 | 110" | 7/16" | 85" | 4 | 4 | 110" | 7/16" | 85" |
| 112" | BJ | 4 | 4 | 112" | 7/16" | 86-1/2" | 4 | 4 | 112" | 7/16" | 86-1/2" |
| 114" | BK | 4 | 4 | 114" | 7/16" | 88" | 4 | 4 | 114" | 7/16" | 88" |
| 116" | BL | 4 | 4 | 116" | 7/16" | 89-1/2" | 4 | 4 | 116" | 7/16" | 89-1/2" |
| 118" | BM | 4 | 4 | 118" | 7/16" | 91" | 4 | 4 | 118" | 7/16" | 91" |
| 120" | BN | 4 | 4 | 120" | 7/16" | 92-1/2" | 4 | 4 | 120" | 7/16" | 92-1/2" |
| 122" | BO | 4 | 4 | 122" | 7/16" | 94" | 4 | 4 | 122" | 7/16" | 94" |
| 124" | BP | 4 | 4 | 124" | 7/16" | 95-1/2" | 4 | 4 | 124" | 7/16" | 95-1/2" |
| 126" | BQ | 4 | 4 | 126" | 7/16" | 97" | 4 | 4 | 126" | 7/16" | 97" |
| 128" | BR | 4 | 4 | 128" | 7/16" | 98-1/2" | 4 | 4 | 128" | 7/16" | 98-1/2" |
| 130" | BS | 4 | 4 | 130" | 7/16" | 100" | 4 | 4 | 130" | 7/16" | 100" |
| 132" | BT | 4 | 4 | 132" | 7/16" | 101-1/2" | 4 | 4 | 132" | 7/16" | 101-1/2" |
| 134" | BU | 4 | 4 | 134" | 7/16" | 103" | 4 | 4 | 134" | 7/16" | 103" |
| 136" | BV | 4 | 4 | 136" | 7/16" | 104-1/2" | 4 | 4 | 136" | 7/16" | 104-1/2" |
| 138" | BW | 4 | 4 | 138" | 7/16" | 106" | 4 | 4 | 138" | 7/16" | 106" |
| 140" | BX | 4 | 4 | 140" | 7/16" | 107-1/2" | 4 | 4 | 140" | 7/16" | 107-1/2" |
| 142" | BY | 4 | 4 | 142" | 7/16" | 109" | 4 | 4 | 142" | 7/16" | 109" |
| 144" | BZ | 4 | 4 | 144" | 7/16" | 110-1/2" | 4 | 4 | 144" | 7/16" | 110-1/2" |
| 146" | CA | 4 | 4 | 146" | 7/16" | 112" | 4 | 4 | 146" | 7/16" | 112" |
| 148" | CB | 4 | 4 | 148" | 7/16" | 113-1/2" | 4 | 4 | 148" | 7/16" | 113-1/2" |
| 150" | CC | 4 | 4 | 150" | 7/16" | 115" | 4 | 4 | 150" | 7/16" | 115" |
| 152" | CD | 4 | 4 | 152" | 7/16" | 116-1/2" | 4 | 4 | 152" | 7/16" | 116-1/2" |
| 154" | CE | 4 | 4 | 154" | 7/16" | 118" | 4 | 4 | 154" | 7/16" | 118" |
| 156" | CF | 4 | 4 | 156" | 7/16" | 119-1/2" | 4 | 4 | 156" | 7/16" | 119-1/2" |
| 158" | CG | 4 | 4 | 158" | 7/16" | 121" | 4 | 4 | 158" | 7/16" | 121" |
| 160" | CH | 4 | 4 | 160" | 7/16" | 122-1/2" | 4 | 4 | 160" | 7/16" | 122-1/2" |
| 162" | CI | 4 | 4 | 162" | 7/16" | 124" | 4 | 4 | 162" | 7/16" | 124" |
| 164" | CJ | 4 | 4 | 164" | 7/16" | 125-1/2" | 4 | 4 | 164" | 7/16" | 125-1/2" |
| 166" | CK | 4 | 4 | 166" | 7/16" | 127" | 4 | 4 | 166" | 7/16" | 127" |
| 168" | CL | 4 | 4 | 168" | 7/16" | 128-1/2" | 4 | 4 | 168" | 7/16" | 128-1/2" |
| 170" | CM | 4 | 4 | 170" | 7/16" | 130" | 4 | 4 | 170" | 7/16" | 130" |
| 172" | CN | 4 | 4 | 172" | 7/16" | 131-1/2" | 4 | 4 | 172" | 7/16" | 131-1/2" |
| 174" | CO | 4 | 4 | 174" | 7/16" | 133" | 4 | 4 | 174" | 7/16" | 133" |
| 176" | CP | 4 | 4 | 176" | 7/16" | 134-1/2" | 4 | 4 | 176" | 7/16" | 134-1/2" |
| 178" | CQ | 4 | 4 | 178" | 7/16" | 136" | 4 | 4 | 178" | 7/16" | 136" |
| 180" | CR | 4 | 4 | 180" | 7/16" | 137-1/2" | 4 | 4 | 180" | 7/16" | 137-1/2" |
| 182" | CS | 4 | 4 | 182" | 7/16" | 139" | 4 | 4 | 182" | 7/16" | 139" |
| 184" | CT | 4 | 4 | 184" | 7/16" | 140-1/2" | 4 | 4 | 184" | 7/16" | 140-1/2" |
| 186" | CU | 4 | 4 | 186" | 7/16" | 142" | 4 | 4 | 186" | 7/16" | 142" |
| 188" | CV | 4 | 4 | 188" | 7/16" | 143-1/2" | 4 | 4 | 188" | 7/16" | 143-1/2" |
| 190" | CW | 4 | 4 | 190" | 7/16" | 145" | 4 | 4 | 190" | 7/16" | 145" |
| 192" | CX | 4 | 4 | 192" | 7/16" | 146-1/2" | 4 | 4 | 192" | 7/16" | 146-1/2" |
| 194" | CY | 4 | 4 | 194" | 7/16" | 148" | 4 | 4 | 194" | 7/16" | 148" |
| 196" | CZ | 4 | 4 | 196" | 7/16" | 149-1/2" | 4 | 4 | 196" | 7/16" | 149-1/2" |
| 198" | DA | 4 | 4 | 198" | 7/16" | 151" | 4 | 4 | 198" | 7/16" | 151" |
| 200" | DB | 4 | 4 | 200" | 7/16" | 152-1/2" | 4 | 4 | 200" | 7/16" | 152-1/2" |
| 202" | DC | 4 | 4 | 202" | 7/16" | 154" | 4 | 4 | 202" | 7/16" | 154" |
| 204" | DD | 4 | 4 | 204" | 7/16" | 155-1/2" | 4 | 4 | 204" | 7/16" | 155-1/2" |
| 206" | DE | 4 | 4 | 206" | 7/16" | 157" | 4 | 4 | 206" | 7/16" | 157" |
| 208" | DF | 4 | 4 | 208" | 7/16" | 158-1/2" | 4 | 4 | 208" | 7/16" | 158-1/2" |
| 210" | DG | 4 | 4 | 210" | 7/16" | 160" | 4 | 4 | 210" | 7/16" | 160" |
| 212" | DH | 4 | 4 | 212" | 7/16" | 161-1/2" | 4 | 4 | 212" | 7/16" | 161-1/2" |
| 214" | DI | 4 | 4 | 214" | 7/16" | 163" | 4 | 4 | 214" | 7/16" | 163" |
| 216" | DJ | 4 | 4 | 216" | 7/16" | 164-1/2" | 4 | 4 | 216" | 7/16" | 164-1/2" |
| 218" | DK | 4 | 4 | 218" | 7/16" | 166" | 4 | 4 | 218" | 7/16" | 166" |
| 220" | DL | 4 | 4 | 220" | 7/16" | 167-1/2" | 4 | 4 | 220" | 7/16" | 167-1/2" |
| 222" | DM | 4 | 4 | 222" | 7/16" | 169" | 4 | 4 | 222" | 7/16" | 169" |
| 224" | DN | 4 | 4 | 224" | 7/16" | 170-1/2" | 4 | 4 | 224" | 7/16" | 170-1/2" |
| 226" | DO | 4 | 4 | 226" | 7/16" | 172" | 4 | 4 | 226" | 7/16" | 172" |
| 228" | DP | 4 | 4 | 228" | 7/16" | 173-1/2" | 4 | 4 | 228" | 7/16" | 173-1/2" |
| 230" | DQ | 4 | 4 | 230" | 7/16" | 175" | 4 | 4 | 230" | 7/16" | 175" |
| 232" | DR | 4 | 4 | 232" | 7/16" | 176-1/2" | 4 | 4 | 232" | 7/16" | 176-1/2" |
| 234" | DS | 4 | 4 | 234" | 7/16" | 178" | 4 | 4 | 234" | 7/16" | 178" |
| 236" | DT | 4 | 4 | 236" | 7/16" | 179-1/2" | 4 | 4 | 236" | 7/16" | 179-1/2" |
| 238" | DU | 4 | 4 | 238" | 7/16" | 181" | 4 | 4 | 238" | 7/16" | 181" |
| 240" | DV | 4 | 4 | 240" | 7/16" | 182-1/2" | 4 | 4 | 240" | 7/16" | 182-1/2" |
| 242" | DW | 4 | 4 | 242" | 7/16" | 184" | 4 | 4 | 242" | 7/16" | 184" |
| 244" | DX | 4 | 4 | 244" | 7/16" | 185-1/2" | 4 | 4 | 244" | 7/16" | 185-1/2" |
| 246" | DY | 4 | 4 | 246" | 7/16" | 187" | 4 | 4 | 246" | 7/16" | 187" |
| 248" | DZ | 4 | 4 | 248" | 7/16" | 188-1/2" | 4 | 4 | 248" | 7/16" | 188-1/2" |
| 250" | EA | 4 | 4 | 250" | 7/16" | 190" | 4 | 4 | 250" | 7/16" | 190" |
| 252" | EB | 4 | | | | | | | | | |



REAR VIEW



TOP VIEW (COVER REMOVED)

NOTE:
1. PARTS LOCATIONS ARE RELATIVE, (DO NOT SCALE.)

| REV | DATE | DESCRIPTION | DESIGNED | CHECKED | APPROVED | DATE |
|-----|---------|---------------|----------|---------|----------|---------|
| 1 | 10/1/61 | MODIFIED NOTE | 10/1/61 | 10/1/61 | 10/1/61 | 10/1/61 |

| | |
|--|-------------------------------|
| FEDERAL AERONAUTICS AGENCY NATIONAL BUREAU OF STANDARDS COMMUNICATIONS ENGINEERING BRANCH RADIO HEADSET PANEL ASSEMBLY | DATE 9-22-61 DR-D-40091-3A |
|--|-------------------------------|



FAA-E-2075a

June 15, 1967
SUPERSEDING
FAA-E-2075, 2/17/64

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION SPECIFICATION

RADIO HEADSET PANEL

1. SCOPE

1.1 Scope.— The equipment specified herein is a Radio Headset Panel that is designed to couple one or two headsets and other leased communication facilities into FAA-owned equipment.

2. APPLICABLE DOCUMENTS

2.1 FAA specifications and standards.— The following FAA specifications and standards of the issues specified in the invitation for bid or request for proposals form a part of this specification:

FAA-D-1272 Instruction Booklets, Electronic Equipment

FAA-G-2100/1 Electronic Equipment, General Requirements,
Part I, General Requirements for all Equipment

FAA-R-1030 Packing of Electronic Equipment

(Copies of these specifications, and of the applicable FAA specifications and drawings, may be obtained from Federal Aviation Administration, Washington, D. C. 20590, ATTN: Contracting Officer. Requests should fully identify material desired, i.e., specification numbers, dates, amendment numbers, complete drawing numbers; also requests should state the contract involved or other use to be made of the requested material.)

3. REQUIREMENTS

3.1 Equipment to be furnished by the contractor.- Each equipment furnished by the contractor shall be complete in accordance with all specification requirements. Instruction booklets shall be furnished in accordance with Specification FAA-D-1272. Information about integration into the system and theory of operation will be supplied by the FAA at the request of the Contractor.

3.2 Test conditions and power source

3.2.1 Service conditions.- The ambient conditions shall be those of Environment I (1-3.2.23, FAA-G-2100/1).

3.2.2 Power source.- The equipment shall operate from a two wire DC power source. The design-center voltage (1-3.2.21, FAA-G-2100/1) shall be 48 v.

3.3 Construction.- Each equipment shall be of rack-panel-and-chassis construction, size "B" one piece without door. The chassis shall be at least 5" deep and shall have a full size removable cover plate on top to allow access to components and wiring. In other respects, the chassis shall be in accordance with the following portions of Dr-D-21342F: rear view, end view, general details, notes 2, 3, 4 (change .064 to .063), 5, 8, 10, and 11. The transformer T-1 and relays, shall be mounted outside on the rear chassis wall; all other components shall be mounted inside and appropriately spaced for accessibility. The connectors and R-1 shall be accessible for tests and adjustments from the rear without removing the panel from the rack. See D-40091-3A.

3.4 Wiring.- Wiring shall be in accordance with FAA-G-2100/1 and drawing DR-C-40091-1-C.

3.5 Components.- Where brand names, or equal, are specified, also see paragraph 1-3.14.1.2 of FAA-G-2100/1.

3.5.1 Relays.- Relays K1 and K2 shall be C. P. Clare Type J with code 24 bifurcated contacts, or equal, with individual covers, 200-ohm $\pm 5\%$ coils properly phased as reactors, to operate on 48 v dc. Relays K3 To K6 shall be C. P. Clare Type J with code 24 bifurcated contacts, or equal, with individual covers, 1600-ohm $\pm 5\%$ coils for 48 v dc operation.

3.5.2 Induction coil.- The induction coil shall be Western Electric Type WE-181B, or equal.

3.5.3 Varistor unit.- The varistor shall be Western Electric Type VR-33L, or equal.

3.5.4 Resistors.- Resistor R1 shall be a wire-wound potentiometer, +10% tolerance, with split shank locking feature. R2 through R14 shall be 5% tolerance. R2 through R6, R8 through R10, and R12 through R14 shall be 1/2 watt; R7 and R11, 1 watt. Resistance values shall be as indicated on DR-C-40091-1-C.

3.5.5 Capacitors.- Capacitors C1 and C2 shall be 6 MFD Aerovox Type P30ZN, or equal. C3 shall be 3 MFD Aerovox Type P30ZN, or equal (modifies FAA-G-2100/1).

3.5.6 Transformer.- Transformer T1 shall meet the following requirements:

| | |
|----------------------|--|
| Primary impedance: | 600 ohms +10% at 1000 Hz |
| Secondary impedance: | 5000 ohms +10% at 1000 Hz |
| Frequency range: | 300 to 3000 Hz +2 db referred to 1000 Hz |
| Transformer loss: | Less than 1 db |
| Operating level: | For 1mw, or less |

3.5.7 Connectors.- The connectors shall be Amphenol Blue Ribbon, or equal, catalog numbers as follows: J1 shall be No. 26-4401-16P; J2, 26-4401-24P. Mating connectors Nos. 26-4301-16S and 26-4301-26S shall be supplied with J1 and J2. The connectors shall mate with existing Blue Ribbon connectors of these types on FAA-connected equipment.

3.5.8 Hum and cross talk level.- Hum and cross talk level developed in the unit shall not exceed -50 dbm at output terminals of transmitting circuit and -70 dbm at output of receiving circuits under the test conditions of 4.3.

3.6 Nameplate.- The nameplate shall be centrally mounted on the front panel. The name shall be: RADIO HEADSET PANEL .

4. QUALITY ASSURANCE PROVISIONS

4.1 Design qualification test.- The following design qualification test shall be made under normal test conditions:

| <u>Test</u> | <u>Paragraph</u> |
|-----------------------------|------------------|
| Transformer Characteristics | 3.5.6 |

4.2 Type tests.- None required.

4.3 Production tests.- The following production tests shall be made:

| <u>Test</u> | <u>Paragraph</u> |
|--------------------------------------|------------------|
| Circuit ring out and relay operation | 3.4, 3.5.1 |
| Hum and cross talk level | 3.5.8 |

TEST A

- (1) Connect 91-ohm, 1.0 watt resistors across terminals 7 and 8, and 9 and 10, of J1.
- (2) Strap terminals 1 to 2, 3 to 4, and 5 to 6, of J1, to operate all relays except K5.
- (3) Connect a 48 v dc power supply with not more than 1% rms ripple voltage, to terminals 1 and 2 of J2.
- (4) Apply a 1000 Hz 2.7 volt rms signal to terminals 15 and 16 of J2.

The hum and cross talk level measured across terminals 11 and 12, and 13 and 14, of J2 shall not exceed -50 dbm.

TEST B

Connect the same as in TEST A, except:

- (1) Remove the 1000 Hz signal from terminals 15 and 16 of J2 and connect across resistor on terminals 7 and 8, or 9 and 10, of J1.
- (2) Connect 600-ohm resistors between terminals 11 and 12, 17 and 18, 19 and 20, of J2, and between terminals 11 and 12 of J1.
- (3) Adjust 1000 Hz signal to produce -10 dbm across resistor connected to terminals 11 and 12 of J2.

The hum and cross talk level measured across resistors connected to terminals 11 and 12 of J1, and terminals 17 and 18, 19 and 20, of J2 shall not exceed -70 dbm.

5. PREPARATION FOR DELIVERY

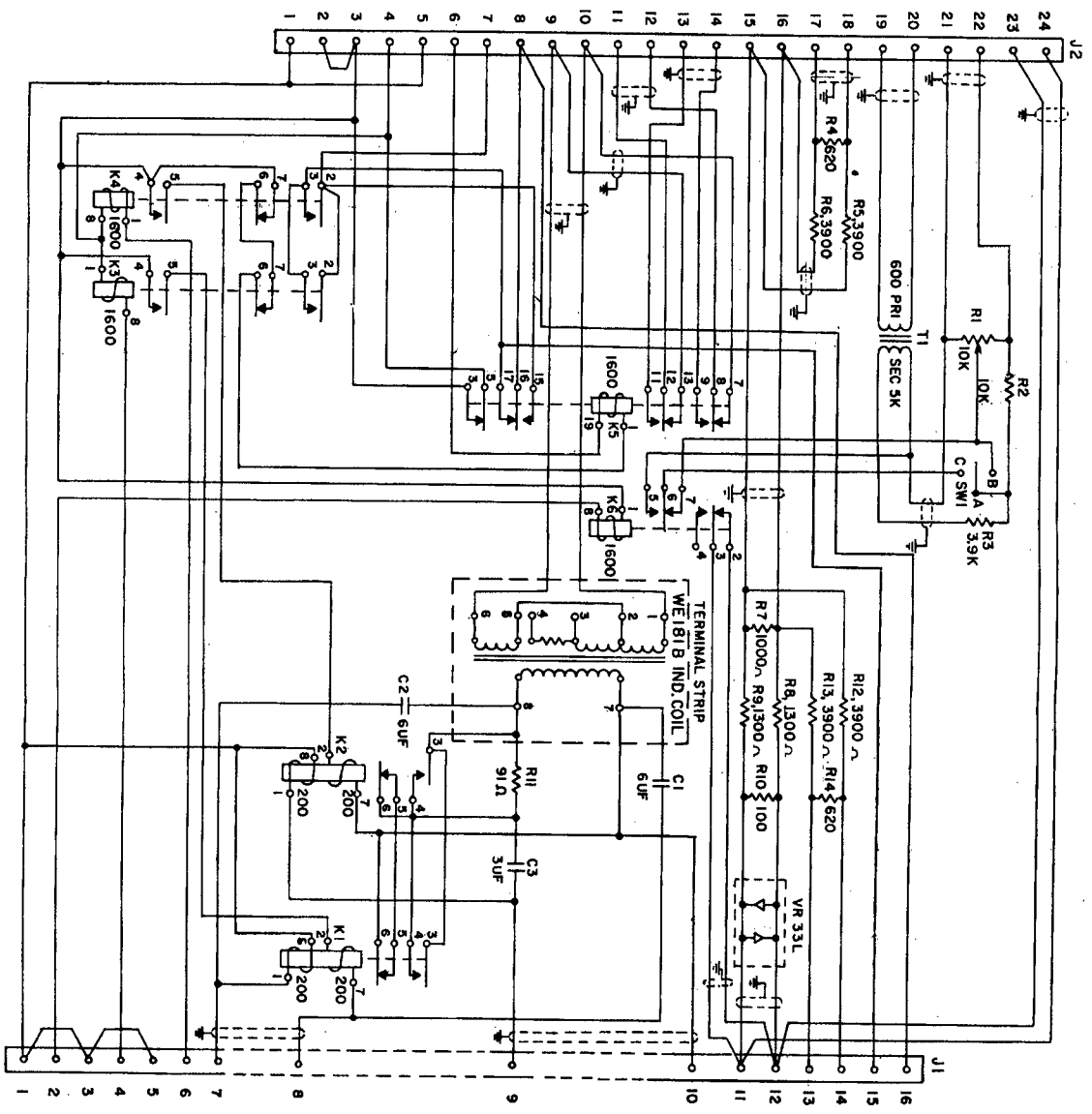
5.1 General.- See FAA-R-1030.

6. NOTES

6.1 Notes.- None.

* * * * *

ATTCH: DR-C-40091-1-C
DR-D-40091-3A
DR-D-21342F



- NOTES:
1. AMPHENOL BLUE RIBBON CONNECTORS SER. 26.
 2. J1 AND J2 MOUNTED ON CHASSIS.
 3. R2 THRU R6, R8 THRU R10, 1/2 WATT.
 4. R1 WIRE WOUND POTENTIOMETER.
 5. R7 & R11, 1 WATT - R2 THRU R14, 5%.

| | | | |
|--|--|-----------------------|--|
| FEDERAL AVIATION AGENCY | | RADIO HEADSET PANEL | |
| AVIATION FACILITIES SERVICE | | WIRING DIAGRAM | |
| COMMUNICATIONS ENGINEERING BRANCH | | DATE: 10-3-61 | |
| DELETED NOTE 3, CORRECT RESISTOR VALUES | | APPROVED: [Signature] | |
| C AND TERM. 15 OF J1 | | 3-7-61 | |
| B ADDED R12, R13, R14, TRANS PRI. 100 TO 600 | | 7-3-61 | |
| A CHG R4, R5 & R6 PER EEM AF P 6330.1 CH I | | 10-3-61 | |
| 10-3-61 | | DR-C-40091-1-C | |

